MC 87-I-33A(P)

PRELIMINARY REPORT
INDUSTRY SERIES

1987 Census of Manufactures

MC87-I-33A(P)
Issued July 1989

BLAST FURNACES, STEEL WORKS, AND ROLLING AND FINISHING MILLS

Industries 3312, 3313, 3315, 3316, and 3317

INTRODUCTION

This report presents preliminary statistics from the 1987 Census of Manufactures for those establishments classified in the industries listed above. These data will be superseded by a more comprehensive final paperbound report. The method of data collection and use of administrative data are discussed in detail in the appendix.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The definitions of these industries are the same as those used in the 1987 Standard Industrial Classification (SIC) Manual.[1]

INDUSTRY 3312, BLAST FURNACES AND STEEL MILLS

In the 1987 Census of Manufactures, Industry 3312, Blast Furnaces and Steel Mills, had employment of 194.2 thousand. The employment figure was 34 percent below the 295.8 thousand reported in 1982. Compared with 1986, employment in 1987 increased 1 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $41.1 billion.

The cost of materials and services used by establishments in this industry amounted to $24.3 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3313, ELECTROMETALLURGICAL PRODUCTS

In the 1987 Census of Manufactures, Industry 3313, Electrometallurgical Products, had employment of 3.9 thousand. The employment figure was 26 percent below the 5.3 thousand reported in 1982. Compared with 1986, employment in 1987 increased 8 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $843.8 million.

The cost of materials and services used by establishments in this industry amounted to $514.9 million in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3315, STEEL WIRE AND RELATED PRODUCTS

In the 1987 Census of Manufactures, Industry 3315, Steel Wire and Related Products, had employment of 24.4 thousand. The employment figure was 10 percent above the 22.2 thousand reported in 1982. Compared with 1986, employment in 1987 increased 16 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $3.3 billion.

[1] **Standard Industrial Classification Manual: 1987.** For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

Address inquiries to Bureau of the Census, Industry Division, Washington, DC 20233, or call **Jessica Young** (301) 763-7304.

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The cost of materials and services used by establishments in this industry amounted to $1.9 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3316, COLD FINISHING OF STEEL SHAPES

In the 1987 Census of Manufactures, Industry 3316, Cold Finishing of Steel Shapes, had employment of 11.8 thousand. The employment figure was 23 percent below the 15.4 thousand reported in 1982. Compared with 1986, employment in 1987 decreased 10 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $2.9 billion.

The cost of materials and services used by establishments in this industry amounted to $2.0 billion in 1987. Data on specific materials consumed appear in table 3.

INDUSTRY 3317, STEEL PIPE AND TUBES

In the 1987 Census of Manufactures, Industry 3317, Steel Pipe and Tubes, had employment of 20.4 thousand. The employment figure was 24 percent below the 27.0 thousand reported in 1982. Compared with 1986, employment in 1987 increased 7 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The total value of shipments for establishments classified in this industry was $4.2 billion.

The cost of materials and services used by establishments in this industry amounted to $2.6 billion in 1987. Data on specific materials consumed appear in table 3.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
pt.	Part.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone
Census/ASM		
Durables	Kenneth Hansen	(301) 763-7304
Nondurables	Michael Zampogna	(301) 763-2510
Current Industrial Reports		
Durables	Malcolm Bernhardt	(301) 763-2518
Nondurables	Thomas Flood	(301) 763-5911
Import/Export Publications	Foreign Trade Division	(301) 763-5140
Industry Analysis and Forecasts	International Trade Administration	(202) 377-4356

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
INDUSTRY 3312, BLAST FURNACES AND STEEL MILLS															
1987 Census	(NA)	442	230	194.2	6 618.1	151.6	315.7	4 998.0	16 878.1	24 272.0	41 118.6	1 473.0	6 698.4	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	192.2	6 281.5	147.7	294.5	4 701.5	12 453.0	21 677.5	34 924.9	924.9	6 349.3	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	217.9	6 984.6	167.7	330.6	5 182.6	12 763.5	24 719.8	38 080.4	2 044.3	7 483.9	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	247.3	7 467.2	190.0	375.6	5 481.0	14 563.2	25 807.3	40 335.2	1 691.5	8 685.3	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	249.2	7 353.3	186.1	349.3	5 292.8	12 380.5	23 639.9	36 449.7	1 986.9	8 749.3	(NA)	(NA)
1982 Census	[5]211	301	223	295.8	8 677.9	215.2	375.7	6 181.6	11 763.3	23 568.7	36 824.4	2 170.2	10 043.6	98	79
1981 ASM	(NA)	(NA)	(NA)	390.3	11 461.8	301.7	572.4	8 621.5	20 100.2	37 788.5	57 472.9	2 808.6	10 983.8	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	402.9	10 493.4	312.6	577.5	7 898.2	18 632.2	31 863.3	50 303.9	2 632.5	10 381.5	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	451.2	10 989.5	361.4	700.7	8 530.9	21 039.0	35 143.9	55 695.8	2 320.3	10 178.3	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	443.5	9 842.6	353.7	699.2	7 605.6	19 085.7	30 603.2	49 055.4	2 178.0	9 081.0	(NA)	(NA)
1977 Census	395	504	250	441.9	8 725.7	350.2	668.7	6 653.0	15 331.9	26 715.0	41 998.2	2 143.0	8 471.6	97	(D)
1976 ASM	(NA)	(NA)	(NA)	451.9	8 041.7	358.0	680.9	6 100.7	14 755.5	25 665.9	39 684.1	2 142.3	8 850.1	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	451.3	7 076.4	354.8	657.7	5 298.5	13 356.2	23 162.3	35 659.8	2 068.0	7 428.2	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	518.0	7 513.2	412.3	811.5	5 848.8	17 425.8	24 341.6	41 671.7	1 643.4	5 632.7	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	502.1	6 480.9	409.9	822.8	5 065.2	12 769.4	17 382.5	30 365.5	1 110.5	4 502.6	(NA)	(NA)
1972 Census	241	364	251	469.1	5 537.8	379.3	739.1	4 254.3	10 304.7	14 022.6	23 946.7	961.2	4 571.6	95	(D)
INDUSTRY 3313, ELECTROMETALLURGICAL PRODUCTS															
1987 Census	(NA)	30	24	3.9	112.6	2.8	5.9	74.7	291.8	514.9	843.8	24.7	205.8	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	3.6	99.4	2.6	5.5	66.7	207.1	433.1	667.9	[6]33.0	217.6	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	4.4	117.3	3.3	6.7	80.6	313.9	481.9	783.1	[6]32.4	268.7	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	4.9	126.5	3.6	7.6	89.7	331.5	525.7	835.8	18.6	286.7	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	4.4	100.9	3.3	6.8	70.8	192.5	428.8	661.5	11.8	311.6	(NA)	(NA)
1982 Census	32	41	26	5.3	123.5	3.9	7.0	85.5	180.3	494.2	707.5	23.8	371.0	97	87
1981 ASM	(NA)	(NA)	(NA)	8.0	168.4	6.3	13.0	124.4	375.9	856.2	1 161.9	119.0	411.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	8.5	169.9	6.7	13.4	128.4	412.0	854.7	1 249.3	34.2	311.2	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	9.3	172.9	7.6	15.2	135.5	428.8	916.3	1 356.6	24.6	345.4	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	8.5	141.8	6.8	13.5	108.4	248.3	767.1	1 078.0	52.0	334.1	(NA)	(NA)
1977 Census	28	42	31	8.9	139.2	7.0	14.3	103.9	274.6	687.0	930.6	53.2	403.8	(D)	90
1976 ASM	(NA)	(NA)	(NA)	8.3	118.5	6.6	12.8	88.2	289.9	593.8	854.6	77.7	358.4	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	8.9	111.9	7.2	14.0	84.4	381.0	545.6	833.1	66.2	331.6	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	9.2	109.3	7.6	15.0	85.4	426.4	546.7	958.4	61.1	187.7	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	9.3	100.3	7.8	15.3	77.3	210.3	422.9	670.6	42.0	131.5	(NA)	(NA)
1972 Census	27	40	31	9.5	94.1	7.8	15.1	71.7	217.2	335.4	550.1	26.3	173.0	(D)	87
INDUSTRY 3315, STEEL WIRE AND RELATED PRODUCTS															
1987 Census	(NA)	339	206	24.4	591.6	18.3	39.3	404.6	1 433.7	1 886.4	3 324.1	64.1	576.0	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	21.1	488.7	15.8	32.5	335.3	1 007.7	1 612.6	2 624.6	63.6	477.5	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	20.9	470.8	15.9	31.6	325.5	998.5	1 542.1	2 549.8	80.5	462.3	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	22.3	491.9	17.2	34.0	342.6	1 131.0	1 578.0	2 689.6	95.2	509.3	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	22.5	461.5	17.1	32.6	317.4	981.6	1 494.8	2 490.9	74.6	525.7	(NA)	(NA)
1982 Census	252	311	186	22.2	444.5	16.4	31.3	298.4	941.8	1 436.7	2 420.9	61.4	498.6	97	44
1981 ASM	(NA)	(NA)	(NA)	32.2	614.0	24.5	48.5	419.1	1 268.5	1 857.6	3 066.5	83.7	568.5	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	32.5	563.4	24.3	48.7	381.6	1 175.2	1 753.6	2 927.0	83.8	507.2	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	33.8	556.3	25.7	52.3	384.4	1 217.3	1 722.7	2 923.9	89.5	506.8	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	33.0	497.0	25.6	51.4	349.1	1 067.4	1 505.8	2 542.4	80.8	494.8	(NA)	(NA)
1977 Census	262	335	223	31.7	436.6	24.3	49.0	304.9	924.4	1 341.2	2 258.6	79.4	422.8	95	47
1976 ASM	(NA)	(NA)	(NA)	32.9	421.6	24.2	49.2	284.0	866.2	1 150.2	2 012.5	53.4	416.6	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	30.0	357.0	22.8	45.5	240.8	731.7	1 062.8	1 800.5	56.8	377.7	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	33.8	385.1	27.2	54.0	266.0	923.5	1 148.9	1 995.0	48.7	436.5	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	33.5	338.8	26.8	54.7	244.4	722.0	833.5	1 556.4	43.6	291.6	(NA)	(NA)
1972 Census	235	289	199	30.6	287.9	24.1	49.4	202.1	583.5	657.8	1 227.7	26.6	263.9	94	42
INDUSTRY 3316, COLD FINISHING OF STEEL SHAPES															
1987 Census	(NA)	184	94	11.8	359.4	8.1	17.0	233.2	853.5	2 027.6	2 880.7	45.0	551.2	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	13.1	387.0	9.4	18.7	271.1	1 108.5	2 377.6	3 514.5	51.2	643.0	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	13.6	383.2	9.8	19.4	261.9	1 030.7	2 341.3	3 432.3	57.1	698.7	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	14.7	404.1	10.8	21.1	285.5	1 346.1	2 677.6	3 992.1	60.7	707.4	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	14.8	396.9	10.8	20.9	272.9	996.4	2 267.3	3 310.9	41.8	652.7	(NA)	(NA)
1982 Census	146	192	106	15.4	367.9	10.9	19.7	245.6	623.3	2 348.2	3 005.1	45.2	682.8	92	32
1981 ASM	(NA)	(NA)	(NA)	18.3	444.8	13.4	25.7	309.6	840.0	2 605.7	3 403.1	74.4	524.3	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	18.4	407.2	13.4	25.6	279.9	759.2	2 306.5	3 077.4	71.6	463.2	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	20.3	421.2	15.2	31.1	300.8	1 097.1	2 552.9	3 610.5	53.4	512.5	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	20.5	380.2	15.6	31.2	274.4	999.2	2 195.1	3 180.4	58.4	478.9	(NA)	(NA)
1977 Census	118	155	94	19.4	334.6	14.6	28.7	238.8	799.6	1 936.8	2 713.2	49.6	436.6	95	25
1976 ASM	(NA)	(NA)	(NA)	17.3	265.1	12.9	25.1	184.1	627.0	1 649.8	2 248.5	42.2	378.4	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	16.1	219.3	11.7	21.9	146.7	410.6	1 280.7	1 703.5	48.9	322.5	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	22.4	292.8	17.1	34.1	210.5	291.8	1 750.0	2 650.3	61.5	374.2	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	21.1	252.7	16.5	34.0	185.8	597.0	1 420.9	2 028.2	30.1	266.9	(NA)	(NA)
1972 Census	86	125	93	20.1	223.3	15.6	31.8	162.3	504.6	1 144.2	1 635.7	20.6	289.8	91	29
INDUSTRY 3317, STEEL PIPE AND TUBES															
1987 Census	(NA)	224	160	20.4	548.1	16.0	32.3	390.5	1 530.1	2 599.5	4 165.1	59.7	727.2	(NA)	(NA)
1986 ASM	(NA)	(NA)	(NA)	19.1	469.5	14.6	28.7	327.0	1 085.3	1 953.9	3 055.1	72.2	592.9	(NA)	(NA)
1985 ASM	(NA)	(NA)	(NA)	21.0	510.6	16.0	30.8	357.0	1 092.8	2 116.7	3 291.9	60.3	671.4	(NA)	(NA)
1984 ASM	(NA)	(NA)	(NA)	23.7	537.1	18.3	36.0	373.1	1 178.3	2 313.7	3 522.2	77.8	760.4	(NA)	(NA)
1983 ASM	(NA)	(NA)	(NA)	23.1	537.1	17.5	32.0	369.8	959.9	2 047.3	3 057.0	134.4	791.9	(NA)	(NA)
1982 Census	170	223	167	27.0	648.1	20.3	37.6	460.6	1 212.7	2 451.7	3 762.2	124.5	906.4	94	47
1981 ASM	(NA)	(NA)	(NA)	28.6	675.2	22.3	43.4	495.8	1 970.1	3 121.4	5 020.2	122.9	878.6	(NA)	(NA)
1980 ASM	(NA)	(NA)	(NA)	27.6	580.7	21.3	40.9	417.5	1 363.3	2 548.0	3 929.3	119.7	749.6	(NA)	(NA)
1979 ASM	(NA)	(NA)	(NA)	29.8	573.9	23.4	46.8	420.7	1 385.5	2 420.1	3 722.1	105.2	800.3	(NA)	(NA)
1978 ASM	(NA)	(NA)	(NA)	28.8	514.3	22.8	46.3	384.6	1 135.2	2 192.7	3 278.9	76.3	659.2	(NA)	(NA)

See footnotes at end of table.

Table 1. Historical Statistics for the Industry: 1987 and Earlier Years—Con.

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Year[1]	Companies[2] (no.)	All establishments[3] Total (no.)	All establishments[3] With 20 employees or more (no.)	All employees Number (1,000)	All employees Payroll (million dollars)	Production workers Number (1,000)	Production workers Hours (millions)	Production workers Wages (million dollars)	Value added by manufacture[4] (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories[4] (million dollars)	Ratios Specialization (percent)	Ratios Coverage (percent)
	INDUSTRY 3317, STEEL PIPE AND TUBES—Con.														
1977 Census	130	180	142	27.8	449.4	21.8	43.7	330.6	987.9	1 731.9	2 681.4	117.5	571.6	95	44
1976 ASM	(NA)	(NA)	(NA)	21.7	319.1	16.7	32.5	226.9	715.3	1 171.0	1 887.6	57.0	415.0	(NA)	(NA)
1975 ASM	(NA)	(NA)	(NA)	25.5	341.7	19.9	39.4	247.5	903.7	1 360.4	2 214.8	47.8	417.4	(NA)	(NA)
1974 ASM	(NA)	(NA)	(NA)	27.6	340.6	21.8	45.2	253.5	993.3	1 412.0	2 373.4	42.6	379.8	(NA)	(NA)
1973 ASM	(NA)	(NA)	(NA)	25.8	294.5	20.7	43.6	221.9	636.2	999.8	1 619.6	37.7	260.0	(NA)	(NA)
1972 Census	115	152	122	23.6	245.5	18.8	39.0	181.8	506.1	807.9	1 292.1	24.1	235.1	93	42

Note: Establishments of single unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. Data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were estimated based on administrative-record information from other agencies in conjunction with industry averages. These establishments accounted for the following percent of total value of shipments: SIC 3312, 1%; SIC 3313, 2%; SIC 3315, 13%; SIC 3316, 8%; and SIC 3317, 7%.

[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Includes establishments with payroll at any time during year.

[4]Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

[5]Beginning in 1982, administrative-record cases have been eliminated for industry 3312.

[6]Estimates for new capital expenditures have associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text.]

1987 product code	Product	Year	Number of companies with shipments of $100,000 or more	Quantity of total production	Product shipments[1] Total, including interplant transfers Quantity[2]	Product shipments[1] Total, including interplant transfers Value (million dollars)	Product shipments[1] Commercial Quantity	Product shipments[1] Commercial Value (million dollars)	Product shipments[1] Interplant transfers Quantity	Product shipments[1] Interplant transfers Value (million dollars)	Quantity produced and consumed in the same plant in manufacture of other products
3312- —	**BLAST FURNACES AND STEEL MILLS**										
	Total	**1987**	**(NA)**	**(X)**	**(X)**	**39 663.3**	**(X)**	**(X)**	**(X)**	**(X)**	**(X)**
		1982	**(NA)**	**(X)**	**(X)**	**35 458.8**	**(X)**	**(X)**	**(X)**	**(X)**	**(X)**
33121 —	Coke oven and blast furnace products, including ferroalloys	1987	(NA)	(X)	(X)	1 299.0	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	1 873.1	(X)	(X)	(X)	(X)	(X)
	Coke oven products:										
33121 11	Coke, except screenings and breeze ---- 1,000 s tons	1987	(NA)	23 697.4	11 462.4	921.8	5932.7	489.6	5 529.7	432.2	14 809.6
		1982	31	26 992.9	9 787.2	1 062.6	4 614.4	504.5	5 172.8	558.1	18 016.9
33121 12	Screenings and breeze ---- do	1987	(NA)	2 920.5	1 222.9	50.5	(D)	(D)	(D)	(D)	1 795.7
		1982	21	2 620.9	1 402.1	56.1	1 339.3	53.7	62.8	2.4	1 025.0
33121 31	Coke oven gas ---- mil cu ft	1987	(NA)	29 104.1	(D)	(D)	(D)	(D)	(D)	(D)	27 674.7
		1982	4	25 474.1	(D)	(D)	(D)	(D)	(D)	(D)	23 836.0
33121 41	Ammonia (sulfate and liquor)	1987	(NA)	(X)	(X)	10.1	(X)	9.9	(X)	.2	(X)
		1982	11	(X)	(X)	20.2	(X)	20.2	(X)	–	(X)
33121 51	Crude tar ---- mil gal	1987	(NA)	323.2	422.0	83.2	(D)	(D)	(D)	(D)	48.0
		1982	21	295.3	189.1	137.5	(D)	(D)	(D)	(D)	105.7
33121 71	Crude light oil ---- do	1987	(NA)	(S)	(S)	43.4	(S)	43.4	–	–	(D)
		1982	16	94.7	45.6	41.4	(D)	(D)	(D)	(D)	36.5
33121 81	Light oil derivatives ---- do	1987	(NA)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1982	5	34.1	34.6	31.6	(D)	(D)	(D)	(D)	(D)
33121 86	Other coke oven products, including tar derivatives	1987	(NA)	(X)	(X)	6.9	(X)	6.8	(X)	.1	(X)
		1982	7	–	(D)	(D)	(D)	(D)	(D)	(D)	(X)
	Blast furnace products:										
33121 91	Pig iron, including pig iron with silicon content up to and including 6 percent silicon ---- 1,000 s tons	1987	(NA)	42 418.0	521.3	81.2	(D)	(D)	(D)	(D)	42 947.6
		1982	9	33 836.8	317.9	63.7	(D)	(D)	(D)	(D)	33 652.0
33121 92	Slag ---- do	1987	(NA)	(X)	(S)	2.6	(X)	(X)	(X)	(X)	(X)
		1982	7	(X)	5 752.2	8.6	(X)	(X)	(X)	(X)	(X)
33121 93	Sinter from ore, flue dust, and other materials ---- do	1987	(NA)	15 651.2	(D)	(D)	(D)	(D)	(D)	(D)	19 469.6
		1982	3	16 921.2	1 165.4	64.4	80.2	3.6	1 085.2	8.2	15 766.0
33121 94	Blast furnace gas ---- mil cu ft	1987	(NA)	(D)	(D)	(D)	(D)	(D)	–	–	(D)
		1982	1	1 568.2	(D)	(D)	(D)	(D)	–	–	1 640.5
33121 98	Other blast furnace products ---- 1,000 s tons	1987	(NA)	(D)	(D)	(D)	(D)	(D)	–	–	(D)
		1982	7	13 009.7	1 213.4	268.5	299.3	84.1	(D)	(D)	(D)
33121 00	Coke oven and blast furnace products, including ferroalloys, n.s.k.	1987	(NA)	(X)	(X)	144.7	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	1.6	(X)	(X)	(X)	(X)	(X)

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	Year	Number of companies with shipments of $100,000 or more	Quantity of total production	Product shipments[1]						Quantity produced and consumed in the same plant as manufacture of other products
					Total, including interplant transfers		Commercial		Interplant transfers		
					Quantity[2]	Value (million dollars)	Quantity	Value (million dollars)	Quantity	Value (million dollars)	
3312- —	**BLAST FURNACES AND STEEL MILLS** —Con.										
33122 —	Steel ingot and semifinished shapes:										
33122 00	Steel ingot and semifinished shapes and forms (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	3 509.7	(X)	(X)	(X)	(X)	(X)
		1982	58	(X)	(X)	3 082.0	(X)	(X)	(X)	(X)	(X)
33123 —	Hot rolled sheet and strip, including tin mill products:										
33123 00	Tin plate, black plate, terne plate, tin free steel, and hot rolled sheet and strip (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	15 976.3	(X)	(X)	(X)	(X)	(X)
		1982	37	(X)	(X)	11 913.5	(X)	(X)	(X)	(X)	(X)
33124 —	Hot rolled bars and bar shapes, plates, structural shapes,and piling:										
33124 00	Plates, structural shapes, piling, hot rolled bars and bar shapes, including concrete reinforcing and tool steel bars (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	8 651.0	(X)	(X)	(X)	(X)	(X)
		1982	87	(X)	(X)	8 199.2	(X)	(X)	(X)	(X)	(X)
33125 —	Steel wire (produced in steel mills) (see also code 33155):										
33125 00	Wire, including galvanized and other coated wire, made in plants producing wire rods or hot rolled bars (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	377.8	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	392.4	(NA)	(NA)	(NA)	(X)	(X)
33126 —	Steel pipe and tubes (produced in steel mills) (see also code 33170):										
33126 00	Steel pipe and tubes, made in plants producing semifinished shapes or plate (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	1 346.4	(X)	(X)	(X)	(X)	(X)
		1982	21	(X)	(X)	3 561.5	(X)	(X)	(X)	(X)	(X)
33127 —	Cold rolled steel sheet and strip (produced in steel mills) (see also code 33167):										
33127 00	Cold rolled sheet and strip, made in plants producing hot rolled sheet or strip (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	6 839.9	(X)	(X)	(X)	(X)	(X)
		1982	18	(X)	(X)	5 162.6	(X)	(X)	(X)	(X)	(X)
33128 —	Cold finished steel bars and bar shapes (produced in steel mills) (see also code 33168):										
33128 00	Cold finished bars and bar shapes, made in plants producing hot rolled bar and bar shapes (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	(NA)	(X)	(X)	784.6	(X)	(X)	(X)	(X)	(X)
		1982	13	(X)	(X)	358.5	(X)	(X)	(X)	(X)	(X)
3312A —	Seamless rolled ring forgings, ferrous (produced in steel mills) (see also code 34627)	1987	(NA)	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
		1982	2	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
	Seamless rolled ring iron and steel forgings:										
3312A 11	Carbon steel ..... 1,000 s tons	1987	2	(X)	(D)	(D)	(D)	(D)	–	–	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312A 23	Alloy steel, excluding stainless and hi-temp ..... do	1987	2	(X)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312A 25	Stainless ..... do	1987	1	(X)	(D)	(D)	(D)	(D)	–	–	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312A 27	Hi-temp (iron, nickel, or cobalt-base alloys) ..... do	1987	1	(X)	(D)	(D)	(D)	(D)	–	–	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312A 00	Seamless rolled ring forgings, ferrous (produced in steel mills), n.s.k.	1987	(NA)	(X)	(X)	31.1	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	(NA)	(X)	(X)	(X)	(X)	(X)
3312B —	Open die or smith forgings (hammer or press), ferrous (see also code 34628)	1987	(NA)	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
		1982	10	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
	Open die or smith iron and steel forgings (hammer or press), ferrous:										
3312B 61	Carbon steel ..... 1,000 s tons	1987	6	(X)	11.7	14.4	4.0	6.8	7.7	7.6	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312B 63	Alloy steel, excluding stainless and hi-temp ..... do	1987	5	(X)	47.1	101.1	6.9	18.2	40.2	82.9	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312B 65	Stainless ..... do	1987	4	(X)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)
3312B 67	Hi-temp (iron, nickel, or cobalt-base alloys) ..... do	1987	–	(X)	(D)	(D)	(D)	(D)	(D)	(D)	(X)
		1982	(NA)	(X)	(NA)	(NA)	(NA)	(NA)	(NA)	(X)	(X)
3312B 00	Open die or smith forgings (hammer or press) ferrous, n.s.k.	1987	–	(X)	(X)	–	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	(NA)	(X)	(X)	(X)	(X)	(X)

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	Year	Number of companies with shipments of $100,000 or more	Quantity of total production	Product shipments[1]						Quantity produced and consumed in the same plant in manufacture of other products
					Total, including interplant transfers		Commercial		Interplant transfers		
					Quantity[2]	Value (million dollars)	Quantity	Value (million dollars)	Quantity	Value (million dollars)	
3312- —	**BLAST FURNACES AND STEEL MILLS —Con.**										
3312C —	Other steel mill products, including steel rails, except wire products:										
3312C 00	Other steel mill products, except wire products (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	1987	13	(X)	(X)	277.0	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	395.6	(X)	(X)	(X)	(X)	(X)
33120 —	Blast furnaces and steel mill products, n.s.k:										
33120 00	Blast furnaces and steel mill products, n.s.k., typically for establishments with 20 employees or more (see note)	1987	(NA)	(X)	(X)	393.8	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	108.5	(X)	(X)	(X)	(X)	(X)
3313- —	**ELECTROMETALLURGICAL PRODUCTS**										
	Total	**1987**	**(NA)**	**(X)**	**(X)**	**837.0**	**(X)**	**(X)**	**(X)**	**(X)**	**(X)**
		1982	(NA)	(X)	(X)	726.0	(X)	(X)	(X)	(X)	(X)
33131 —	Ferromanganese:										
33131 00	Ferromanganese (including briquets), manganese metal, and silicomanganese — 1,000 s tons	1987	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
		1982	7	(NA)	(D)	(D)	(NA)	(NA)	(NA)	(NA)	(NA)
33132 —	Ferrochromium:										
33132 00	Ferrochromium (including briquets), ferrochromium silicon, exothermic chromium additives, and other chromium alloys — 1,000 s tons	1987	6	23.0	28.6	40.8	(D)	(D)	(D)	(D)	(D)
		1982	10	128.8	112.6	75.1	(D)	(D)	(D)	(D)	(D)
33133 —	Ferrosilicon:										
33133 00	Ferrosilicon (including briquets) and other silicon alloys — 1,000 s tons	1987	8	627.8	559.3	317.2	(D)	(D)	(D)	(D)	98.3
		1982	11	406.6	409.6	243.0	375.0	235.0	34.6	8.0	84.9
33134 —	Other ferroalloys produced in electric furnaces	1987	(NA)	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	(D)	(X)	(X)	(X)	(X)	(X)
33134 15	Super alloys (superior heat and creep resistant alloys excluded from alloy categories listed elsewhere) — 1,000 s tons	1987	5	26.2	23.1	183.6	(D)	(D)	(D)	(D)	–
		1982	6	10.9	11.1	98.5	(D)	(D)	(D)	(D)	(D)
33134 89	Other ferroalloys, including silvery iron and spiegeleisen — do	1987	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	–
		1982	5	(NA)	(D)	(D)	(NA)	(NA)	(NA)	(NA)	(NA)
33134 98	Other products made in electric and other furnaces — do	1987	11	(S)	(S)	118.3	(D)	(D)	(D)	(D)	(D)
		1982	10	475.0	89.7	71.7	(D)	(D)	(D)	(D)	376.5
33134 00	Other ferroalloys produced in electric furnaces, n.s.k.	1987	(NA)	(X)	(X)	6.6	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	(NA)	(X)	(X)	(X)	(X)	(X)
33130 —	Electrometallurgical products, n.s.k.	1987	(NA)	(X)	(X)	42.2	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	43.3	(X)	(X)	(X)	(X)	(X)
33130 00	Electrometallurgical products, n.s.k., typically for establishments with 10 employees or more (see note)	1987	(NA)	(X)	(X)	40.2	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	42.2	(X)	(X)	(X)	(X)	(X)
33130 02	Electrometallurgical products, n.s.k., typically for establishments with less than 10 employees (see note)	1987	(NA)	(X)	(X)	2.0	(X)	(X)	(X)	(X)	(X)
		1982	(NA)	(X)	(X)	1.1	(X)	(X)	(X)	(X)	(X)

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3315- —	**STEEL WIRE AND RELATED PRODUCTS**						
	Total	**(NA)**	**(X)**	**3 439.6**	**(NA)**	**(X)**	**[3]2 967.7**
33151 —	Noninsulated ferrous wire rope, cable, and strand, made in wiredrawing plants (see also code 34961)	(NA)	(X)	581.6	(NA)	(X)	522.0
33151 13	Rope and cable made from steel wire (excluding fabricated wire rope assemblies) (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	11	(X)	239.2	16	(X)	286.8

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

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1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3315- —	**STEEL WIRE AND RELATED PRODUCTS**—Con.						
33151 —	Noninsulated ferrous wire rope, cable, and strand, made in wiredrawing plants (see also code 34961)—Con.						
33151 15	Fabricated wire rope assemblies, including lifting slings ---- 1,000 s tons	3	4.5	13.6	16	(D)	(D)
33151 22	Composite rope and cable ---- do						
	Steel wire strand:						
33151 23	Composite, except ACSR (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- 1,000 s tons	6	85.5	105.2	4	32.6	40.7
33151 33	For prestressed concrete (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	8	(D)	(D)	9	(D)	(D)
33151 35	Other, including guard rail cable (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	10	(S)	85.9	15	149.6	88.4
33151 51	Wire forms, except rope assemblies ---- do	4	(D)	(D)	6	(S)	7.5
33151 00	Noninsulated ferrous wire rope, cable, and strand, made in wiredrawing plants, n.s.k. ----	-	(X)	31.5	(NA)	(X)	(Z)
33152 —	Steel nails, staples, tacks, spikes, and brads ----	(NA)	(X)	559.1	(NA)	(X)	*434.4
33152 01	Round wire nails, collated, prepackaged (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- 1,000 s tons	11	(S)	133.7	(NA)	(NA)	(NA)
	Round wire nails, not collated, smooth shank:						
	Coated, plated, or painted:						
33152 03	Galvanized (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- 1,000 s tons	8	95.4	66.6	(NA)	(NA)	(NA)
33152 05	Vinyl, resin, or cement coated (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	5	80.5	37.6	(NA)	(NA)	(NA)
33152 07	Other (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	7	*5.4	4.7	(NA)	(NA)	(NA)
33152 09	Not coated, plated, or painted (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	6	76.0	40.2	(NA)	(NA)	(NA)
	Round wire nails, not collated, other than smooth shank:						
	Coated, plated, or painted:						
33152 10	Galvanized (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- 1,000 s tons	6	24.7	27.2	(NA)	(NA)	(NA)
33152 12	Vinyl, resin, or cement coated (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	4	7.4	3.8	(NA)	(NA)	(NA)
33152 14	Other (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	4	(S)	1.7	(NA)	(NA)	(NA)
33152 16	Not coated, plated, or painted (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	4	5.7	5.4	(NA)	(NA)	(NA)
33152 22	Steel cut nails, including horseshoe nails (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	8	(S)	43.8	17	(S)	52.0
33152 30	Steel spikes and brads, including track spikes ---- do	4	(S)	17.9			
33152 23	Steel wire staples (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do	11	(S)	81.2	24	*188.1	157.2
33152 25	Steel tacks (wire and cut) ---- do	10	(S)	77.1	6	(S)	10.1
33152 00	Steel nails, staples, tacks, spikes, and brads, n.s.k. ----	-	(X)	18.4	(NA)	(X)	1.6
33155 —	Steel wire, not produced in steel mills (see also code 33125):						
33155 00	Steel wire, including galvanized and other coated wire (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ----	(NA)	(X)	1 126.7	99	(X)	1 000.6
33156 —	Fencing and fence gates, made in wiredrawing plants (see also code 34966) ----	(NA)	(X)	258.7	(NA)	(X)	301.6
	Chain link fencing, excluding posts, gates, and fittings:						
33156 15	Galvanized ---- 1,000 s tons	8	137.5	83.4	12	**102.7	63.9
33156 17	Other, including plastics coated ---- do						
	Woven and welded fencing, excluding posts, gates, and fittings:						
33156 22	Galvanized (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- 1,000 s tons	10	(S)	101.5	13	235.9	148.7
33156 24	Other, including plastics coated (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products) ---- do						
33156 35	Fence gates, posts, and fittings ---- do	8	54.7	20.7	12	*70.8	56.3
33156 71	Ornamental lawn fence ---- do				-	-	-
33156 00	Fencing and fence gates, made in wiredrawing plants, n.s.k. ----	(NA)	(X)	53.1	(NA)	(X)	22.5
33157 —	Ferrous wire cloth and other ferrous woven wire products, made in wiredrawing plants (see also code 34964) ----	(NA)	(X)	60.4	(NA)	(X)	68.0
	Stainless steel:						
33157 21	With meshes not finer than 12 wires to the lineal centimeter in warp or filling ---- mil sq ft	1	(D)	(D)	(NA)	(NA)	(NA)
33157 22	With meshes finer than 12 wires but not finer than 36 wires to the lineal centimeter in warp or filling ---- do	1	(D)	(D)	(NA)	(NA)	(NA)
33157 23	With meshes finer than 36 wires to the lineal centimeter in warp or filling ---- do	1	(D)	(D)	(NA)	(NA)	(NA)
	Other:						
33157 41	With meshes not finer than 12 wires to the lineal centimeter in warp or filling ---- mil sq ft	3	(D)	(D)	(NA)	(NA)	(NA)
33157 42	With meshes finer than 12 wires but not finer than 36 wires to the lineal centimeter in warp or filling ---- do	1	(D)	(D)	(NA)	(NA)	(NA)

See footnotes at end of table.

Table 2. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 product code	Product	1987			1982		
		Number of companies with shipments of $100,000 or more	Product shipments[1]		Number of companies with shipments of $100,000 or more	Product shipments[1]	
			Quantity[2]	Value (million dollars)		Quantity[2]	Value (million dollars)
3315- —	**STEEL WIRE AND RELATED PRODUCTS**—Con.						
33157 —	Ferrous wire cloth and other ferrous woven wire products, made in wiredrawing plants (see also code 34964)—Con.						
	Other—Con.						
33157 43	With meshes finer than 36 wires to the lineal centimeter in warp or filling ---- mil sq ft	-	-	-	(NA)	(NA)	(NA)
33157 00	Ferrous wire cloth and other ferrous woven wire products, made in wiredrawing plants, n.s.k.	(NA)	(X)	17.3	-	-	-
33159 —	Other fabricated ferrous wire products, except springs, made in wiredrawing plants (see also code 34968)	(NA)	(X)	598.4	(NA)	(X)	547.2
	Wire chain:						
33159 41	Tire ---- 1,000 s tons	1	(D)	(D)	5	14.2	34.3
	Other wire chain:						
33159 44	Stud-link ---- 1,000 s tons	-	-	-	6	(S)	97.0
33159 45	Welded-link, except stud ---- do	1	(D)	(D)			
33159 48	Other wire chain, n.e.c. ---- do	-	-	-			
33159 51	Barbed and twisted wire (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	6	(X)	47.1	11	(X)	59.0
33159 55	Wire bale ties (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	6	(X)	18.5	7	(X)	18.5
	Welded steel wire fabrics:						
33159 61	Concrete reinforcing mesh ---- 1,000 s tons	12	618.2	266.2	17	*481.1	217.5
33159 65	Other welded steel wire fabrics ---- do	3	(D)	(D)	8	60.7	39.0
33159 71	Wire garment hangers ---- mil lb	5	(S)	85.9	4	153.7	57.7
33159 73	Wire carts, including household, grocery, and industrial	-	(X)	-	-	(X)	-
33159 75	Steel wire cages	-	(X)	-	-	(X)	-
33159 99	Other wire products, including guards, baskets, florists' designs, paperclips, kitchenware, wire shelving, wire rack, etc.	13	(X)	45.1	12	(X)	20.6
33159 00	Other fabricated ferrous wire products, except springs (made in wiredrawing plants), n.s.k.	(NA)	(X)	93.6	(NA)	(X)	3.3
33150 —	Steel wire and related products, n.s.k.	(NA)	(X)	254.8	(NA)	(NA)	(NA)
33150 00	Steel wire and wire products, n.s.k., typically for establishments with 20 employees or more (see note)	(NA)	(X)	204.1	(NA)	(X)	(NA)
33150 02	Steel wire and wire products, n.s.k., typically for establishments with less than 20 employees (see note)	(NA)	(X)	50.7	(NA)	(X)	(NA)
3316- —	**COLD FINISHING OF STEEL SHAPES**						
	Total	**(NA)**	**(X)**	**3 770.2**	**(NA)**	**(X)**	**2 803.4**
33167 —	Cold rolled steel sheet and strip (not made in steel mills) (see also code 33127):						
33167 00	Cold rolled sheet and strip made in plants not producing hot rolled sheet or strip (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	(NA)	(X)	2 115.4	56	(X)	1 815.3
33168 —	Cold finished steel bars and bar shapes (not made in steel mills) (see also code 33128):						
33168 00	Cold finished steel bars and bar shapes made in plants not producing hot rolled bars and bar shapes (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	(NA)	(X)	1 393.0	56	(X)	905.8
33160 —	Cold finishing of steel shapes, n.s.k.	(NA)	(X)	261.9	(NA)	(X)	82.3
33160 00	Cold finished steel shapes, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(X)	187.1	(NA)	(X)	49.3
33160 02	Cold finished steel shapes, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X)	74.8	(NA)	(X)	33.0
3317- —	**STEEL PIPE AND TUBES**						
	Total	**(NA)**	**(X)**	**3 858.2**	**144**	**(X)**	**3 657.1**
33170 —	Steel pipe and tubes (not made in steel mills) (see also code 33126):						
33170 00	Steel pipe and tubes made in plants not producing semifinished shapes or plate (for additional detail, see Current Industrial Report MA-33B, Steel Mill Products)	(NA)	(X)	3 858.2	(NA)	(X)	3 657.1

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-records data rather than data actually collected from respondents. Employment cutoffs used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

[1]Data reported by all producers, not just those with shipments of $100,000 or more.

[2]For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[3]For 1982, industry 3315 includes data that was published in 34967.

[4]For 1982, product class 33152 includes data that was published in 34967.

Table 3. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987 Quantity[1]	1987 Delivered cost (million dollars)	1982 Quantity[1]	1982 Delivered cost (million dollars)
	INDUSTRY 3312, BLAST FURNACES AND STEEL MILLS				
	Materials, parts, containers, and supplies	(X)	**19 724.8**	(X)	**18 238.5**
120001	Coal used in the production of coke, 1,000 s tons	(S)	1 859.9	37 394.4	2 455.2
	Iron ore (including pelletized and manganiferrous):				
101112	Crude (gross weight), 1,000 s tons	8 161.8	204.8	14 280.6	281.0
101123	Concentrates (gross weight), do	6 756.3	189.4	11 151.8	487.0
101125	Agglomerates (gross weight), do	51 927.7	1 690.9	39 196.9	2 068.6
106113	Ferroalloy ores (excluding manganese) (gross weight), do	(D)	(D)	(D)	(3)
106112	Manganese ore, including ferruginous (containing 10 percent manganese) (gross weight), do	(S)	11.9	239.8	12.4
331051	Pig iron (excluding silvery iron), do	2 100.8	300.6	1 128.4	180.5
190023	Iron and steel purchased scrap, do	41 581.6	3 672.8	28 161.2	2 049.6
331081	Steel rails for rerolling, do	(D)	(D)	*217.5	21.8
	Nonferrous metals, alloys, and ferroalloys (ingot, pig, shot, etc.):				
333402	Aluminum, 1,000 s tons	190.9	180.5	63.0	75.9
333113	Copper (including both refined unalloyed and copper-base alloy raw materials), do	3.9	5.5	3.7	5.0
333971	Nickel (excluding ferronickel), do	51.6	217.8	45.9	180.5
333975	Tin, do	(S)	59.6	10.7	136.7
333984	Lead, do	*7.3	6.5	14.6	12.7
333348	Zinc, do	208.3	172.7	217.9	176.8
333982	Cobalt, mil lb	*1 105.8	10.7	892.4	11.7
331313	Ferromanganese, silicomanganese, and manganese, 1,000 s tons	573.2	235.5	513.9	232.6
331320	Ferrochromium, do	353.1	192.7	230.5	145.2
331331	Ferrosilicon (more than 8 percent silicon), do	228.2	118.3	159.5	94.3
331343	Ferromolybdenum, do	7.9	44.2	6.8	70.0
331345	Ferronickel, do	33.5	74.1	24.6	56.8
331353	Ferrovanadium, do	5.0	48.8	2.7	31.9
331342	Other ferroalloys (including silvery iron and ferotungsten), do	(S)	130.4	66.6	142.9
281930	Sulfuric acid (100 percent H_2SO_4), do	*374.7	16.3	**402.6	22.9
281361	Oxygen (including high and low purity), mil cu ft	235 233.0	249.9	124 588.5	210.3
280005	Industrial chemicals (except sulfuric acid and oxygen)	(X)	113.8	(X)	79.6
291103	Lubricating oils and greases and other petroleum products	(X)	103.9	(X)	95.9
325501	Clay refractories, 1,000 s tons	(S)	292.1	(S)	200.0
329701	Nonclay refractories, do	(S)	183.0	(S)	145.7
332161	Gray iron ingot molds and stools, do	568.3	125.0	*838.6	257.3
	Fluxes:				
329503	Limestone, 1,000 s tons	6 176.8	68.4	8 748.8	85.0
327403	Lime, including quicklime and dead-burned dolomite, do	4 882.3	247.1	4 153.8	209.8
329505	Fluorspar, do	*123.2	15.8	*234.1	30.9
329506	Other fluxes, do	(S)	75.9	*805.2	28.1
331005	Ingots, semifinished shapes (blooms, billets, etc.), and other steel shapes received for further processing, except for drawing wire	(X)	3 354.1	(X)	3 847.1
362411	Carbon and graphite electrodes	(X)	248.4	(X)	259.4
354402	Industrial dies, molds, jigs, and fixtures	(X)	21.9	(X)	36.6
970099	All other materials and components, parts, containers, and supplies	(X)	3 769.3	(X)	[3] 413.2
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	1 271.5	(X)	387.6
	INDUSTRY 3313, ELECTROMETALLURGICAL PRODUCTS				
	Materials, parts, containers, and supplies	(X)	**350.6**	(X)	**335.2**
106113	Ferroalloy ores (excluding manganese) (gross weight), 1,000 s tons			303.2	24.5
106112	Manganese ore, including ferruginous (containing 10 percent manganese) (gross weight), 1,000 gross wt	(S)	29.2	201.7	16.6
190023	Iron and steel purchased scrap, do			275.9	20.1
331313	Ferromanganese, silicomanganese, and manganese, 1,000 s tons				
331320	Ferrochromium, do				
331331	Ferrosilicon (more than 8 percent silicon), do	(D)	(D)	(S)	37.9
331343	Ferromolybdenum, do				
331345	Ferronickel, do				
331353	Ferrovanadium, do				
331342	Other ferroalloys (including silvery iron and ferotungsten), do				
325501	Clay refractories, do	(S)	2.5	(S)	3.3
329701	Nonclay refractories, do	(S)	1.5	*.9	.8
	Fluxes:				
329503	Limestone, 1,000 s tons	(D)	(D)	20.2	1.1
327403	Lime (including quicklime and dead-burned dolomite), do	(D)	(D)		
362411	Carbon and graphite electrodes	(X)	16.4	-	13.7
354402	Industrial dies, molds, jigs, and fixtures	(X)	(D)	-	.2
970099	All other materials and components, parts, containers, and supplies	(X)	198.5	(X)	181.7
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	37.9	(X)	35.3
	INDUSTRY 3315, STEEL WIRE AND RELATED PRODUCTS				
	Materials, parts, containers, and supplies	(X)	**1 644.5**	(X)	**1 275.1**
	Nonferrous metals, alloys, and ferroalloys (ingot, pig, shot, etc.):				
333113	Copper (including both refined unalloyed and copper-base alloy raw materials), 1,000 s tons	(S)	4.0	(S)	7.4
333975	Tin, do				
333984	Lead, do	(S)	1.8	**18.0	1.3
333348	Zinc, do	17.2	14.4	235.3	16.5
281930	Sulfuric acid (100 percent H_2SO_4), do	5.3	.4	126.1	.7

See footnotes at end of table.

Table 3. **Materials Consumed by Kind: 1987 and 1982**—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1987 material code	Material	1987		1982	
		Quantity[1]	Delivered cost (million dollars)	Quantity[1]	Delivered cost (million dollars)
	INDUSTRY 3315, STEEL WIRE AND RELATED PRODUCTS—Con.				
	Steel for drawing wire:				
	Rods:				
331061	Carbon steel ..... 1,000 s tons	*2 473.0	806.9	*4 801.8	673.1
331063	Alloy steel (except stainless) ..... do	*41.4	21.7	*104.7	48.5
331065	Stainless steel ..... do	24.9	45.9	18.5	27.9
	Wire for redrawing:				
331073	Carbon steel ..... 1,000 s tons	123.3	45.2	(S)	135.4
331075	Alloy steel (except stainless) ..... do	(S)	6.0	25.1	11.4
331077	Stainless steel ..... do	(S)	19.2	(S)	24.0
331079	Other steel mill shapes for drawing wire ..... do	(D)	(D)	**72.8	26.9
331005	Ingots, semifinished shapes (blooms, billets, etc.), and other steel shapes received for further processing, except for drawing wire	(X)	6.4	(X)	35.7
970099	All other materials and components, parts, containers, and supplies	(X)	[3]378.1	(X)	159.3
971000	Materials, parts, containers, and supplies, n.s.k.[2]	(X)	294.5	(X)	107.0
	INDUSTRY 3316, COLD FINISHING OF STEEL SHAPES				
	(Material data were not collected for this industry.)				
	INDUSTRY 3317, STEEL PIPE AND TUBES				
	(Material data were not collected for this industry.)				

[1]For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

[2]Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

[3]Data are combined with material code 970099 to avoid disclosing data for individual companies.

APPENDIX
Scope and Coverage and Explanation of Terms

GENERAL

The 1987 Census of Manufactures is the 32nd census of manufacturing establishments conducted in the United States. For 1987, it was conducted as part of the economic censuses, which included the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses, under authority of title 13 of the United States Code. Title 13 specifies that an economic census be conducted every 5 years to cover years ending in 2 and 7.

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. All manufacturing establishments with one paid employee or more at any time during the year are covered by the census of manufactures. Therefore, a company operating at more than one location is required to file a separate report for each location. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units which service manufacturing establishments of the same company. Where these auxiliary operations are conducted at the same location as the manufacturing operation, they are usually included in the report for the operating manufacturing establishment.

Use of Administrative Records

From a universe of approximately 350,000 manufacturing establishments in the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of the small establishment nonmail cases was done on an industry-by-industry basis. A variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. The cutoffs were selected so the administrative-record cases would account for approximately 3 percent or less of the value of shipments for the industry. These cutoffs were then adjusted so that all single-establishment companies with less than 5 employees were excluded from the mail canvass, while all establishments with more than 20 employees were included. Where establishments in the 5 to 20 employee size range were included in the mail canvass, an abbreviated census form was frequently used.

For these nonmail establishments, (and a small number of larger establishment whose reports were not received at the time the data were tabulated) data on employment, payroll, and receipts were obtained from administrative records of other government agencies rather than from census forms. The administrative-record information was then used in conjunction with industry averages to estimate the data for these establishments. The value of shipments and cost of materials were not distributed among specific products and materials but were included in the product and material "not specified by kind" (n.s.k.) categories.

EXPLANATION OF TERMS

Number of establishments and companies–A separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

All employees–Includes all full-time and part-time employees on the payrolls at any time during the year. Included are all persons on paid sick leave, paid holidays, and paid vacations. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for midmonth payroll periods of March, May, August, and November.

Production workers–Includes workers up through the working-supervisor level engaged in fabricating, processing, assembling, inspecting, receiving, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial, guard services, product development, auxiliary production for plant's own use (e.g., powerplant), recordkeeping, and other closely associated services. Truckdrivers delivering ready-mixed concrete are also included in production workers.

Other employees–Includes nonproduction personnel, including those engaged in the following activities: supervision above working-supervisor level, sales (including driver/salespersons), sales delivery (truckdrivers and helpers), advertising, credit collection, installation and

servicing of own product, clerical and routine office functions, executive, purchasing, finance, legal, personnel (including cafeteria, etc.), professional, and technical employees.

Payroll–Includes the gross earnings for the "employees" defined above, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. Respondents were told that in reporting they could follow the definition of payrolls used for calculating the Federal withholding tax.

Production-worker hours–Covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave when the employee was not at the plant.

Cost of materials–Refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuels consumed, regardless of whether they were purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (a) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year; (b) electric energy purchased; (c) fuels consumed for heat, power, or generating electricity; (d) work done by others on materials or parts furnished by manufacturing establishments (contract work); and (e) products bought and resold in the same condition.

Specific materials consumed (table 3)–In addition to the total cost of materials which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. These inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Establishments consuming less than a specified amount (usually $10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which administrative records were used was estimated as "not specified by kind" (n.s.k.).

Value of shipments and other receipts–Generally refers to received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair receipts, sale of scrap, and sale of products bought and resold without further processing. Included are all items made by or for the establishment from materials owned by it whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In a few industries, the value of production or value of work completed is used instead of value of shipments. These industries are identified in the introduction and are footnoted in table 1.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, that is, including not only the direct costs of production but also a reasonable proportion of "all other costs" (including company overhead and profit).

Shipments or production of individual products (table 2)–In the 1987 census, detailed shipment information was collected for approximately 11,000 individual products. These products are identified by a seven-digit code and are grouped into approximately 1,500 classes of products, which in turn are primary to 459 four-digit industries. Data at the five-digit product-class level have been collected each year as part of the annual survey of manufactures. Information at the seven-digit level, collected for many industries in the current industrial reports program, is not included in this table.

Value added by manufacture–This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments for products manufactured plus receipts for services rendered. The result of this calculation is then adjusted by the addition of value added by merchandising operations (that is, the difference between the sales value and cost of merchandise sold without further manufacturing, processing, or assembly) plus the net change in finished goods and work-in-process inventories between the beginning and end of the year.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1), value added is adjusted only for the change in work-in-process inventories between the beginning and end of the year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

Value added avoids the duplication in the figure for value of shipments which results from the use of products of some establishments as materials by others. Value

added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

Expenditures for new plant and equipment–Establishments in operation and any known plants under construction were asked to report their expenditures for (a) permanent additions and major alterations to manufacturing establishments and (b) new machinery and equipment used for replacement and additions to plant capacity if they are of the type for which depreciation accounts are ordinarily maintained.

These totals exclude expenditures for used plant and equipment, expenditures for land, and cost of maintenance and repairs charged as current operating expenses. Data for used plant and equipment will be published in the final industry bulletin.

End-of-year inventories–Comprised of (a) finished products; (b) work-in-process; and (c) materials, supplies, fuels, etc. Beginning in 1982, respondents were asked to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Therefore, 1982 through 1987 data for inventories are not strictly comparable to prior-year data.

Specialization and coverage ratios–An establishment is classified in a particular industry if its shipments of primary products of the industry exceed in value its shipments of the products of any other single industry. An establishments' shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). The following ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in table 1 and data on product shipments shown in table 2.

Specialization ratio–Represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio–Represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments, wherever classified.

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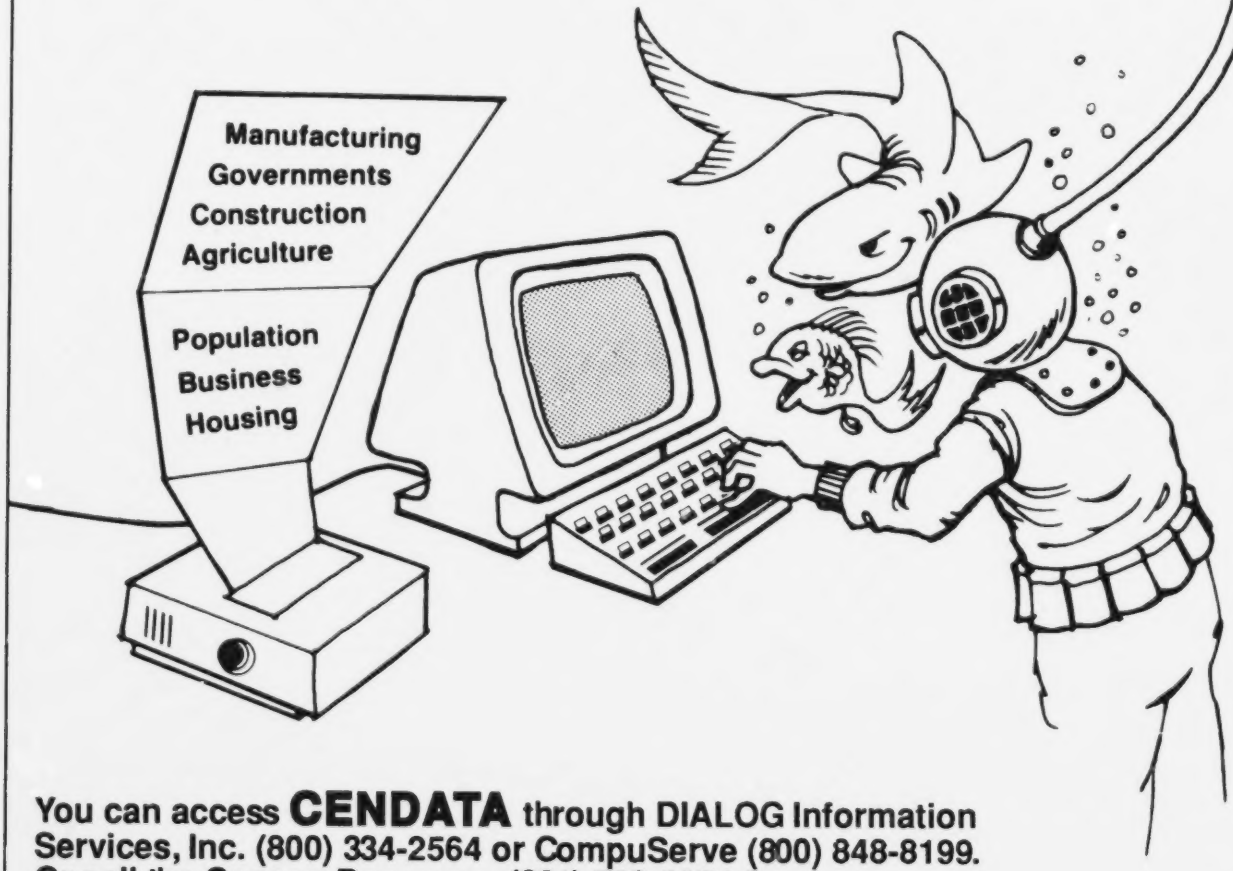

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